

**REMARKS/ARGUMENT****Regarding the Claims in General:**

Claims 1-23 remain pending. Claims 10, 14, and 19 have been amended to address the grammatical errors noted by the Examiner in Section 1 of the Office Action. The other claims are unchanged.

**Regarding The Allowable Subject Matter**

Applicants note with appreciation the allowance of claims 15-23, the indication that claim 14 would be allowed if the objection in Section 1 were overcome, and that claims 4-5, and 7-13 would be allowed if rewritten in independent form incorporating the limitations of their respective parent claims. Because claims 4-5 and 7-13 are all directly or indirectly dependent on claims 1-3 and 6, which are believed to be allowable for the reasons stated below, claims 4-5 and 7-13 have been retained in dependent form pending the Examiner's further consideration.

**Regarding the Prior Art Rejections:**

In the outstanding Office Action, claims 1-3 were rejected as anticipated by Dent et al. U.S. Patent 4,791,482 (Barry), and claim 6 was rejected as obvious over Dent in view of Ryu U.S. Patent Reconsideration and withdrawal of these rejections are accordingly requested.

The present invention and the system disclosed in Dent are very different. Dent describes how ground based stations 101, 102 communicate via satellite 100. Dent is primarily concerned with own-signal interference when the stations 101, 102 are receiving. In order to compensate for this, each station subtracts its own signal, which it previously transmitted, from the received signal, in order to obtain the signal sent from the other station. Note that the satellite 100 simply retransmits the signals it receives from ground stations 101, 102 (see column 3, line 67 to column 4, line 4). The satellite does not alter the received signals before it transmits; it simply delays the transmission.

The present invention, on the other hand, is concerned with a relay station. The relay station receives a first signal, which is a degraded version of a master signal. The relay station then modifies the received first signal and transmits it as a second signal. The first signal differs from the

master signal in two ways - interference (e.g. multipath interference of the master signal) and own signal coupling caused by the transmitted second signal. The relay station functions to make a correction to the received signal and attempts to transmit a second signal which is as close to the master signal as possible.

Referring specifically to claim 1, this requires that the relay station receives a first signal, modifies the first signal to form a second signal and transmits the second signal. As already mentioned, satellite 100 of Dent et al. does not modify the received signal before it transmits it but simply replays the signal in a different timeslot (see column 3, line 64 to column 4 line 4). Stations 101 and 102 in Dent make corrections to a received signal but this is only to obtain the signal transmitted from the other station. Neither station acts as a relay station by retransmitting the received signal (with or without modifications).

Claim 1 further requires that the first signal includes a master signal subject to an interference and also to a coupling component from the second signal. Dent, in contrast, deals only with the coupling component, i.e. the own-signal interference term (see for example the general description of the invention at column 5, lines 31 to 48). Dent does mention multipath interference (see column 3, lines 58 to 62) but only in the context of own signal interference i.e. that the coupling component may comprise several signals derived from the second signal because of multipath interference of the second signal.

Also, in steps (ii) and (iv) of the method of claim 1, an estimate of the interference is derived, stored and used to reduce the difference between the second signal and the master signal. In Dent, the only correction made to a received signal is to remove the own-signal term (by subtracting the signal which the station sent earlier). Moreover, this correction is performed only so that each station can correctly obtain the signal transmitted by the other station, not so that the station can transmit a more correct signal. Thus, Dent does not disclose deriving and storing an estimate of the interference; stations 101, 102, store their transmitted signal, but this is exact, not an estimate, and relates to the coupling component term not the other interference term. Dent also does not disclose that stored term being used to reduce the difference between the transmitted signal and the original signal - remember: stations 101, 102 do not retransmit their received signals.

Finally, steps (i) and (iii) of the method of claim 1 define how the relay station makes an

estimate of the interference term: by removing the coupling component temporarily so that only one interference term remains to the master signal. It is not clear what the Examiner means when he states that "the step of interrupting the transmission of the signal is implied by the step of storing the signal disclosed by Dent et al". If he is referring to the signal transmitted by the satellite 100, this is not interrupted and then resumed, but simply delayed. In any case, it has already been pointed out that the signal transmitted by satellite 100 is quite different from the second signal of claim 1 because no correction is made to that signal.

If, on the other hand, he is referring to either of the stations 101, 102, this makes no sense, as the stations transmit their own signal and receive the other's signal but do not act as relay stations by re-transmitting a received signal.

From the foregoing, it should be apparent that independent claim 1, and dependent claims 2 and 3 are not anticipated by Dent, and should be allowed.

Nor is claim 6 obvious over Dent in view of Ryu. For one thing, claim 6 is dependent on claim 1 and is patentable for the reasons stated above. Ryu does not remedy the deficiencies discussed in detail above, and in any event, the Examiner's stated motivation for combining the references is not valid because Dent does not disclose a repeater or relay system.

In view of the foregoing, favorable reconsideration and allowance of this application are respectfully solicited.

I hereby certify that this correspondence is being transmitted by Facsimile to (703) 872-9306 addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on the date indicated below.

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Respectfully submitted,

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